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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/816,358	03/31/2004	Edward K. Y. Jung	0104-003-003-000000	1749
44765	7590	05/28/2008		
SEARETE LLC CLARENCE T. TEGREENE 1756 - 114TH AVE., S.E. SUITE 110 BELLEVUE, WA 98004			EXAMINER SURVILLO, OLEG	
			ART UNIT	PAPER NUMBER
			2142	
			MAIL DATE	DELIVERY MODE
			05/28/2008	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/816,358	Applicant(s) JUNG ET AL.	
	Examiner OLEG SURVILLO	Art Unit 2142	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 February 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-39 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-39 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 31 March 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____. |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>08/24/07, 09/28/07, 02/14/08, 04/08/08</u> . | 6) <input type="checkbox"/> Other: _____. |

DETAILED ACTION

Response to Amendment

1. Claims 1-39 remain pending in the application. Claims 16 and 32 are currently amended. No claims have been canceled. No new claims have been added.

It is noted that at pages 87-89 of remarks under the heading: Conclusion it is acknowledged that: "*Applicants may have during the course of prosecution cancelled and/or amended one or more claims*". Several submissions pertaining to canceled claims were presented under the same section of remarks. Applicants' uncertainty regarding the status of all claims is not understood. Applicants are therefore requested to verify whether or not any claims were in fact canceled during the course of prosecution because the Examiner fails to see that any claims were canceled in the Amendment dated February 19, 2008.

Response to Arguments

2. With regard to the Applicants' remarks filed on February 19, 2008:

it is noted that Applicants' arguments regarding objections and rejections made in the Office action mailed August 14, 2007 are addressed in the same order as made in the last Office action.

Regarding objection to an abstract as non-enabling to determine the nature and gist of the technical disclosure, Applicant's arguments have been fully considered but they are not persuasive. Applicants argued that *since the abstract includes recitations included in the independent claims, thus the abstract permits one "to determine quickly*

... the nature and gist of the technical disclosure." This argument is not persuasive because the technical disclosure is not the same as the claimed invention. Also, the Examiner fails to see how a short single sentence is helpful in understanding the invention disclosed in the 43-page specification. Therefore, the objection is maintained. Applicants are encouraged to review the guidelines for drafting a proper abstract, as provided below under the heading: Specification.

Regarding objection to the specification as containing disclosure entirely outside the bounds of the claims, Applicants' arguments have been fully considered but they are not persuasive. Therefore, the objection is maintained. Applicants requested the Office to include citation to legal authority, such as citation to statutes or regulations in support of the objection. It is noted that such authority was cited in the last Office action at page 3 under section 4. Cited section of MPEP 1302.01 requires the Applicant to restrict the descriptive matter as to be in harmony with the claims when an application is apparently ready for allowance. Since this application is not in condition for allowance because issued identified below have not been resolved, Applicants are allowed to request objection to the specification as identified under section 7. below to be held in abeyance until allowable subject matter is indicated, pursuant to 37 CFR 1.111(b). However, Applicants are strongly encouraged to comply with the requirements of MPEP section 1302.01 early during the course of prosecution of the above-identified application unless they intend to incorporate the subject matter of all co-pending applications into the presently claimed invention prior to allowance of this application. If this is the case, appropriate claim amendments are expected in the next response.

Regarding the rejection of claims 17-32 under 35 U.S.C. 101, Applicants' arguments have been fully considered but they are not persuasive. Applicants argued that the Office action fails to establish that claim 17 is directed to non-statutory subject matter because claim 17 does not recite the structure identified by "means-plus-function" language. In particular, Applicants argued that claim 17 does not recite "multi-mote index creation agent" as identified by the Examiner through invocation of 35 U.S.C. 112, sixth paragraph and reviewing the specification to identify the corresponding structure that performs the claimed function. This argument is not persuasive because Applicants failed to either rebut presumption that 35 U.S.C. 112, sixth paragraph applies or explain why the particular structure pointed by the Examiner is not the structure identified by "means" in the claimed "mean-plus-function" language. Therefore, 35 U.S.C. 101 rejection is deemed proper since the claimed system is directed to a software per se, failing to fall within a statutory category of invention. Thus, the rejection is maintained.

It is noted that citation of *In re Alappat* case does not render Applicants argument persuasive because Applicants err in equating "a general purpose computer" of *In re Alappat* to "a system" of claim 17. Use of the word "system" does not inherently mean that the claim is directed to a **machine**. Only if at least one of the claimed elements of the system is a **physical part of a device** can the system as claimed constitute part of a device or a combination of devices to be a **machine** within the meaning of 35 U.S.C. 101. Regarding *In re Alappat* case, the Federal Circuit stated: "... a general purpose computer in effect becomes a special purpose computer once it is programmed to

perform particular functions pursuant to instructions from program software.” The Federal Circuit further stated: “... *a computer operating pursuant to software may represent patentable subject matter...*” Regarding *In re Alappat* case, the Examiner fails to see recitations of “a system” in statements of the Federal Circuit. If Applicants can find such a statement in the Board decision of *In re Alappat* case, they are requested to provide a recitation of such in the next response. Thus, even in view of *In re Alappat*, claim 17 does not constitute patentable subject matter.

Regarding Applicants’ citation of the specification at page 39, line 28-40, and page 40, lines 1-26, the Examiner fails to see a recitation of “means for aggregating” being a hardware element. Also, Applicants err in equating claimed “system” with “computer system” as discussed the cited portion of the specification because claimed “system” is broader than argued “computer system”.

Regarding the rejection of claims 16 and 32 under 35 U.S.C. 112, second paragraph, Applicants’ amendments have been fully considered and are sufficient. Therefore, the rejection has been withdrawn.

Regarding the rejection of claims 33, 34, and 36 under 35 U.S.C. 112, second paragraph, Applicants’ arguments have been fully considered but they are not persuasive. As to claim 34, Applicants argued that claim 34 is unambiguous, as “to index at least a part of at least one mote-addressed content index” is clear on its face. This argument fails to comply with 37 CFR 1.111(b) because it amounts to a general allegation that argued phrase is “clear on its face” lacking evidence to support such statement. Therefore, the rejection is deemed proper and is maintained. As to claim 36,

Applicants disagreed with Examiner's interpretation of a multi-mote index creation agent as being a software program. In particular, Applicants argued that: *"claim 36 includes no recitation of a software program. Thus, a multi-mote index creation agent may not be limited to a software program"*. This argument is not persuasive because claimed limitation was interpreted as a software program in light of the specification, at page 15, lines 9-12. Applicants failed to explain why the particular structure pointed by the Examiner is not the structure identified by "means" in the claimed "mean-plus-function" language. In particular, Applicants failed to provide a citation from the specification that would limit a multi-mote index creation agent to a hardware component. Therefore, the rejection is maintained.

Regarding the rejection of claims 1-4, 7, 8, 10, 11, 13, 17-20, 23, 24, 26, 27, 29, and 33 under 35 U.S.C. 102(b) as being anticipated by Mulgund et al., Applicants' arguments have been fully considered but they are not persuasive. Therefore, the rejection is maintained.

As to claim 1, Applicants argued that the Office action fails to state a prima facie case of anticipation because the cited prior art (Mulgund et al.) fails to identify the same elements as in claim 1. In particular, Applicants asserted that Mulgund does not show verbatim the language of the claim. The Examiner disagrees because in order to for an Examiner to establish a prima facie case of anticipation of an Applicants' claim, the Examiner must interpret the claim. If it could be shown that the cited prior art discloses the claimed limitations in exactly the same words, no claim interpretation would be

necessary. Therefore, Office action is not required to identify a reference that would repeat claim language verbatim.

As to claim 1, Applicants further argued that: *"the Office action has supplied no text, reference, or knowledge explaining why one skilled in the art should equate the above quoted material from Mulgund et al. with the recitation of claim 1"*. The Examiner disagrees for the same reasons as discussed above, wherein the quoted material from Mulgund et al. is not required to repeat the claim language word for word, as claimed limitations are a subject to interpretation, such interpretation being as broad as the claim terms would reasonably allow, in light of the specification, when read by one skilled in the art with which the claimed invention is most closely connected. To that extent, one of ordinary skill in the art at the time of the invention would have interpreted aggregating at least a part of one or more mote-addressed content indexes from a first set of motes as including process of aggregating into a relational database model the state of an ad hoc network comprised of uniquely addressable distributed sensor nodes having sensor data (abstract of Mulgund), wherein sensor data is indexed, as in Figs. 3 and 4 of Mulgund.

As to claims 2-4, 7, 8, 10, 11, 13, 17-20, 23, 24, 26, 27, 29, and 33, Applicants presented same arguments as discussed just above that do not arise a need to be addressed separately. The Examiner disagrees for the same reasons, which are not repeated for brevity.

Regarding the rejection of claims 5, 6, 21, and 22 under 35 U.S.C. 103(a) as being unpatentable over Mulgund et al. in view of Chiloyan et al., Applicants' arguments

have been fully considered but they are not persuasive. Therefore, the rejection is maintained.

As to claim 5, Applicants presented same arguments as discussed just above that do not arise a need to be addressed separately. The Examiner disagrees for the same reasons, which are not repeated for brevity. In addition, Applicants argued that: *"the Office action points to no teaching, suggestion, or motivation in the cited material to combine the teachings of Mulgund et al. and Chiloyan et al."*. The Examiner disagrees. Motivation to modify the teachings of Mulgund with the teachings of Chiloyan was identified in the Office action at page 10, and is repeated by Applicants in their response at the top of page 30 in Remarks.

As to claim 5, Applicants further argued that: *"as the Office action provides no support for the statement that the combination is obvious to one of ordinary skill in the art, Applicant concludes that the Examiner is taking Official notice"*. The Examiner disagrees. Applicants erred in their conclusion that the Office is taking Official notice with respect to claim 5 because no Official notice was taken. In response to Applicants' argument that: *"the recitations of Chiloyan are directed to USB devices rather than notes"* and therefore are nonanalogous art, it has been held that a prior art reference must either be in the field of applicant's endeavor or, if not, then be reasonably pertinent to the particular problem with which the Applicant was concerned, in order to be relied upon as a basis for rejection of the claimed invention. In this case, the recitations from Chiloyan are reasonably pertinent to the particular problem with which the Applicant is

concerned, i.e. obtaining a listing of devices from a registry. Therefore, Applicants' argument is not persuasive, and rejection is maintained.

As to claims 6, 21, and 22, Applicants presented same arguments as discussed just above that do not arise a need to be addressed separately. The Examiner disagrees for the same reasons, which are not repeated for brevity.

Regarding the rejection of claims 9, 12, 14, 15, 25, 28, 30, and 31 under 35 U.S.C. 103(a) as being unpatentable over Mulgund et al. in view of Kung et al., and regarding the rejection of claims 16, 32, and 34-39 under 35 U.S.C. 103(a) as being unpatentable over Mulgund et al. in view of Madden et al., Applicants' arguments have been fully considered but they are not persuasive. Therefore, the rejection is maintained. In particular, Applicants presented same arguments as discussed above that do not arise a need to be addressed separately. The Examiner disagrees for the same reasons, which are not repeated for brevity.

As to any arguments not specifically addressed, they are the same as those discussed above.

Information Disclosure Statement

3. The information disclosure statement filed April 8, 2008 fails to comply with the provisions of 37 CFR 1.98 and MPEP § 609 because documents listed under section U.S. Patent Application Documents are not identified by a U.S. Patent Application Publication Number, as required by column heading. As a result, these documents have not been considered. Also, two U.S. Patents listed under section U.S. Patent

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Documents have not been considered in IDS filed April 8, 2008 because both documents were already considered in the IDS filed April 2, 2007.

Specification

4. Applicant is reminded of the proper content of an abstract of the disclosure.

A patent abstract is a concise statement of the technical disclosure of the patent and should include that which is new in the art to which the invention pertains. If the patent is of a basic nature, the entire technical disclosure may be new in the art, and the abstract should be directed to the entire disclosure. If the patent is in the nature of an improvement in an old apparatus, process, product, or composition, the abstract should include the technical disclosure of the improvement. In certain patents, particularly those for compounds and compositions, wherein the process for making and/or the use thereof are not obvious, the abstract should set forth a process for making and/or use thereof. If the new technical disclosure involves modifications or alternatives, the abstract should mention by way of example the preferred modification or alternative.

The abstract should not refer to purported merits or speculative applications of the invention and should not compare the invention with the prior art.

Where applicable, the abstract should include the following:

- (1) if a machine or apparatus, its organization and operation;
- (2) if an article, its method of making;
- (3) if a chemical compound, its identity and use;
- (4) if a mixture, its ingredients;
- (5) if a process, the steps.

Extensive mechanical and design details of apparatus should not be given.

5. Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

6. The abstract of the disclosure is objected to because it does not enable the United States Patent and Trademark Office and the public generally to determine quickly from a cursory inspection the nature and gist of the technical disclosure.

Correction is required. See MPEP § 608.01(b).

7. The application contains disclosure entirely outside the bounds of the claims.

Applicant is required to modify the brief summary of the invention and restrict the descriptive matter so as to be in harmony with the claims (MPEP § 1302.01).

In particular, it appears that only disclosure of section II. AGGREGATING MOTE-ASSOCIATED INDEX DATA (pages 14-18 of the specification) and partially the disclosure of section I. MOTE-ASSOCIATED INDEX CREATION (pages pertaining to the description of Fig. 2 and Fig. 4) is relevant to the subject matter of claims 1-39, as presently claimed. The rest of the specification describes the subject matter of the co-pending applications wherein the name of each section in the specification corresponds to the name of each of the co-pending applications. Applicants are reminded that the subject matter of later sections of the specification (sections III, IV, and V.) is actually included through their incorporation by reference of the related/parent applications, as mentioned in the beginning of the specification (pages 1-4). As a result, providing a detailed description of the subject matter of co-pending applications is redundant and must be removed from the current application.

Claim Objections

8. Claim 7 is objected to because of the following informalities:

As to claim 7, the claim language is unclear. As claimed: ... ***from one or motes to be included ...*** is unclear. Applicants are advised to amend the claim to read: "... from one or more motes to be included ...". Appropriate correction is required.

Claim Rejections - 35 USC § 101

9. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

10. Claims 17-32 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

Claim 17 incorporates means-plus-function limitation reciting a function to be performed rather than definite structure or materials for performing that function.

As to claim 17, limitation: "means for aggregating" is interpreted to invoke 35 U.S.C. 112, sixth paragraph.

The current specification must be reviewed to assist in identifying the corresponding structure that performs the claimed function. The specification shows that aggregating at least a part of one or more mote-addressed content indexes from a first set of motes is performed by a multi-mote index creation agent (502) (page 17 lines 2-

5). Therefore, means for aggregating are interpreted to be a multi-mote index creation agent (502).

Since the multi-mote index creation agent is a computer program, as evidenced by specification at page 15, lines 9-12, a system of a computer software per se is not in one of the statutory categories.

The use of the word "system" does not inherently mean that the claim is directed to a machine. Only if at least one of the claimed elements of the system is a physical part of a device can the system as claimed constitute part of a device or a combination of devices to be a machine within the meaning of 35 U.S.C. 101.

Evidence is present in the specification that suggests to one of ordinary skill in the art that all claimed elements of the system (means for aggregating) may be reasonably implemented as software programs per se, therefore the claim is rejected as a system of software per se, failing to fall within a statutory category of invention.

As to claims 18-32, additional means-plus-function language does not introduce any tangible elements by further limiting means for aggregating which were identified above as software elements per se. Therefore, additional means fail to render a system of claim 17 statutory under 35 U.S.C. 101.

Claim Rejections - 35 USC § 112

11. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

12. Claims 17-32 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement.

Claims 17-32 incorporate means-plus-function limitations reciting a function to be performed rather than definite structure or materials for performing that function.

As to claim 17, limitation: “means for aggregating” is interpreted to invoke 35 U.S.C. 112, sixth paragraph.

The current specification must be reviewed to assist in identifying the corresponding structure that performs the claimed function. The specification shows that aggregating at least a part of one or more mote-addressed content indexes from a first set of motes is performed by a multi-mote index creation agent (502) (page 17 lines 2-5). Therefore, means for aggregating are a multi-mote index creation agent (502).

As result, claim 17 is a single means claim, i.e., where a means recitation does not appear in combination with another recited element of means, and is, therefore, subject to an undue breadth rejection under 35 U.S.C. 112, first paragraph. *In re Hyatt*, 708 F.2d 712, 714-715, 218 USPQ 195, 197 (Fed. Cir. 1983)

MPEP 2164.08(a)

Claims 18-32 do not introduce at least another element by further limiting means for aggregating of claim 17. Hence, each of the claims 18-32 does not include at least two elements and therefore are subject to an undue breadth rejection under 35 U.S.C. 112, first paragraph, as discussed above.

13. The following is a quotation of the second paragraph of 35 U.S.C. 112:

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The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

14. Claims 33, 34, and 36 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 33 is ambiguous because it is unclear what is being meant by “proximate to a portion of said mote”, which precludes the Examiner from adequately interpreting the words in the claim. Appropriate correction to provide clarity and precision or concise explanation providing evidence of how each of the words recited in the phrase “proximate to a portion of said mote” can be defined and interpreted by one of ordinary skill in the art is required.

Claim 34 is ambiguous because it is unclear what is being meant by “...configured to index at least a part of at least one mote-addressed content index”, which precludes the Examiner from adequately interpreting the words in the claim. Appropriate correction to provide clarity and precision or concise explanation providing evidence of how “to index ... index” is clear on its face to one of ordinary skill in the art is required.

As to claim 36, a multi-mote index creation agent is interpreted by the Examiner as a software program, in light of the specification at page 15, lines 9-12. It is unclear how a software program may comprise a processor, which is a hardware component.

Claim Rejections - 35 USC § 102

15. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

16. Claims 1-4, 7, 8, 10, 11, 13, 17-20, 23, 24, 26, 27, 29, and 33 are rejected under 35 U.S.C. 102(b) as being anticipated by Mulgund et al. (US 2002/0161751 A1).

As to claim 1, Mulgund shows:

aggregating at least a part of one or more mote-addressed content indexes from a first set of motes (abstract, paragraph [0005] and [0025], Fig. 3, Fig. 4), wherein the terms “node” and “mote” are interpreted to have the same meaning of small embedded platform that has one or more sensors (paragraph [0026]) and therefore these terms are used here interchangeably.

As to claim 2, Mulgund shows:

receiving at least a part of one or more mote-addressed indexes of the first set of motes [visiting a node and retrieving the information stored at the node] (paragraph 0062)).

As to claim 3, Mulgund shows:

creating one or more multi-mote content indexes of the first set of motes (Fig. 4, paragraph [0042]).

As to claim 4, Mulgund shows:

obtaining a listing of motes appropriate to at least one of the one of more multi-mote content indexes (paragraphs [0035] and [0037]).

As to claim 7, Mulgund shows:

obtaining a listing of motes appropriate to at least one of the one or more multi-mote content indexes (paragraphs [0035] and [0037]) from one or more motes to be included in the listing (paragraph [0061] and [0062]) wherein the second column in table 1 (CAL) shows the current links from the Node being visited.

As to claim 8, Mulgund shows:

receiving at least a part of at least one of a mote-addressed sensing index from a reporting entity at a mote of the first set of motes [visiting a node and retrieving the information stored at the node] (paragraph 0062]) wherein information is retrieved from a knowledge base (18) at a node (paragraph [0026 lines 11-17) and used to form a relational database (Fig. 3 and Fig. 4).

As to claim 10, Mulgund shows:

receiving at least a part of one or more multi-mote content indexes of the first set of motes [visiting a node and retrieving the information stored at the node] (paragraphs [0007], [0026] lines 11-17, and [0062]).

As to claim 11, Mulgund shows:

receiving at least a part of at least one of a mote-addressed sensing index from a multi-mote reporting entity at a mote of the first set of motes [visiting a node and retrieving the information stored at the node] (paragraph 0062)) wherein information is retrieved from a knowledge base (18) at a node (paragraph [0026] lines 11-17) and used to form a relational database (Fig. 3 and Fig. 4).

As to claim 13, Mulgund shows:

creating an aggregate of at least a part of one or more multi-mote content indexes of the first set of motes (abstract, paragraph [0005] and [0025], Fig. 3, Fig. 4).

As to claims 17-20, 23, 24, 26, 27, 29, Mulgund shows all the elements, as discussed above with respect to the corresponding claims 1-4, 7, 8, 10, 11, 13.

As to claim 33, Mulgund shows:

a mote (Fig. 1 node (2)); and

means for aggregating at least a part of one or more mote-addressed content indexes from a first set of motes [sensor network modeling agent (14), Fig. 2], said means for aggregating proximate to said mote (paragraph [0044]).

Claim Rejections - 35 USC § 103

17. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

18. Claims 5, 6, 21, and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mulgund et al. in view of Chiloyan et al. (US Patent No.: 7,165,109).

As to claim 5, Mulgund shows:

obtaining a listing of motes appropriate to at least one of the one or more multi-mote content indexes (paragraphs [0035] and [0037]) from a multi-mote registry [Nodes Table (20)].

Alternatively, Chiloyan shows:

obtaining a listing of devices from a registry [having an operational system accessing device registry to check if the particular peripheral device model is included in the current device registry] (col. 1 lines 50-65).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the method of Mulgund by obtaining a list of devices from a registry

in order to check if the particular device model and necessary information about the device is in the registry (col. 1 lines 58-63 in Chiloyan).

As to claim 6, Mulgund shows:

obtaining a pre-loaded listing of motes [initial model construction listing] (paragraph [0046]) appropriate to at least one of the one or more multi-mote content indexes (paragraphs [0035] and [0037]).

Alternatively, Chiloyan shows:

obtaining a pre-loaded listing of devices [devices already included in the current device registry] (col. 1 lines 50-55).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the method of Mulgund by obtaining a pre-loaded list of devices in order to check if the particular device model and necessary information about the device is already included in the registry (col. 1 lines 58-63 in Chiloyan).

As to claims 21 and 22, Mulgund in view of Chiloyan show all the elements, as discussed above with respect to the corresponding claims 5 and 6.

19. Claims 9, 12, 14, 15, 25, 28, 30, 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mulgund et al. in view of Kung et al. (US 2005/0021724 A1).

As to claim 9, Mulgund shows:

receiving at least a part of at least one of a mote-addressed index from a reporting entity at a mote of the first set of motes [visiting a node and retrieving the information stored at the node] (paragraph 0062]) wherein information is retrieved from a knowledge base (18) at each node (paragraph [0026 lines 11-17) and used to form a relational database (Fig. 3 and Fig. 4).

Mulgund does not show that received index is a mote-addressed routing/spatial index.

Kung shows determining one or more types of spatial information related to devices of or proximate to the mote (paragraph [0036]).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the method of Mulgund by having a mote-addressed routing/spatial index that is stored at the reporting entity at a mote [knowledge base (18)] being received [obtained] in order to determine a global position of a mote that would identify a location of the mote in space (paragraph [0010] in Kung) and relative to other nodes since each of the sensing nodes in communication with one or more other sensing nodes (paragraph [0026] lines 11-17 in Mulgund).

As to claim 12, Mulgund shows:

receiving at least a part of at least one of a mote-addressed index from a multi-mote reporting entity at a mote of the first set of motes [visiting a node and retrieving the information stored at the node] (paragraph 0062]) wherein information is retrieved from

a knowledge base (18) at each node (paragraph [0026] lines 11-17) and used to form a relational database (Fig. 3 and Fig. 4).

Mulgund does not show that received index is a mote-addressed routing/spatial index.

Kung shows determining one or more types of spatial information related to devices of or proximate to the mote (paragraph [0036]).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the method of Mulgund by having a mote-addressed routing/spatial index that is stored at the reporting entity at a mote [knowledge base (18)] being received [obtained] in order to determine a global position of a mote that would identify a location of the mote in space (paragraph [0010] in Kung) and relative to other nodes since each of the sensing nodes in communication with one or more other sensing nodes (paragraph [0026] lines 11-17 in Mulgund).

As to claims 14 and 15, Mulgund shows:

aggregating at least a part of a mote-addressed index of a multi-mote content index (abstract, paragraph [0005] and [0025], Fig. 3, Fig. 4).

Mulgund does not show that a mote-addressed index is a routing/spatial index.

Kung shows determining one or more types of spatial information related to devices of or proximate to the mote (paragraph [0036]).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the method of Mulgund by having a mote-addressed routing/spatial

index being aggregated in order to determine a global position of a mote that would identify a location of the mote in space (paragraph [0010] in Kung) and relative to other nodes since each of the sensing nodes in communication with one or more other sensing nodes (paragraph [0026] lines 11-17 in Mulgund).

Alternatively to Kung, Madden (reference used in rejection of claim 16) shows a mote-addressed routing/spatial index at a mote (under 2.2 communication in sensor networks, paragraph 2).

As to claims 25, 28, 30, 31, Mulgund in view of Kung shows all the elements, as discussed above with respect to the corresponding claims 9, 12, 14, 15.

20. Claims 16, 32, and 34-39 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mulgund et al. in view of "The Design of an Acquisitional Query Processor For Sensor Networks" by Samuel Madden et al.

As to claim 16, Mulgund shows:

migrating to a mote of the first set of motes [visiting a first sensor node] (paragraph [0007] lines 18-19, paragraph [0062]); and

receiving at least a part of one or more mote-addressed content indexes with the multi-mote index creation agent [interrogating a node with a network modeling agent retrieving the information stored at the node (paragraph [0044]).

Mulgund shows that each node contains some local memory or other knowledge base for recording sensor output data, which can be retrieved by interrogating the node

(paragraph [0030]), which suggests that there exists some management module that collects data from sensors and stores it in the knowledge base. However, the management module per se is not explicitly shown.

Madden shows installing a multi-mote index creation agent at the mote comprising a TinyDB, which is a distributed query processor that runs on each of the nodes in a sensor network (section 1 Introduction, paragraph 4).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the method of Mulgund by installing a multi-mote index creation agent at the mote in order to select, join, project, and aggregate data from the sensors (section 1 Introduction, paragraph 4 in Madden).

As to claim 32, Mulgund in view of Madden shows all the elements, as discussed above with respect to claim 16.

As to claim 34, Mulgund shows
at least one mote (Fig. 1 node (2)); and
at least one multi-mote index creation agent [sensor network modeling agent (14), Fig. 2), said at least one multi-mote index creation agent configured to index at least a part of at least one mote-addressed content index (Fig. 3 and paragraph [0037]).

Mulgund also shows that each node contains some local memory or other knowledge base for recording sensor output data, which can be retrieved by interrogating the node (paragraph [0030]), which suggests that there exists some agent

resident in a mote that collects data from sensors and stores it in the local knowledge base, however, the local agent per se is not explicitly shown.

Madden shows a multi-mote index creation agent resident in a mote comprising a TinyDB, which is a distributed query processor that runs on each of the nodes in a sensor network (section 1 Introduction, paragraph 4).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the method of Mulgund by having a multi-mote index creation agent resident in the mote in order to select, join, project, and aggregate data from the sensors (section 1 Introduction, paragraph 4 in Madden).

As to claim 35, Mulgund in view of Madden shows:

at least one of a sensing function, a control function, or a routing/spatial information of the mote-appropriate device (paragraphs [0037], [0041] in Mulgund) and (under 2.2 Communication in Sensor Networks, paragraph 2 in Madden).

Claim 36 will be examined as best understood.

As to claim 36, Mulgund in view of Madden shows:

a processor configured to obtain at least a sensing function of the mote (section 2.1 Properties of Sensor Devices, paragraph 2 in Madden).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the apparatus of Mulgund by having a processor in order to process sensor data that is being stored in a knowledge base (Fig. 2 in Mulgund).

As to claim 37, Mulgund shows at least one of a processor, a memory, or a communications devices formed from a substrate (paragraph [0026]).

As to claim 38, Mulgund shows:

at least one mote (node (2) in Fig. 1); and

at least one multi-mote registry [Nodes Table (20)], said at least one multi-mote registry having one or more indicators of one or more motes to be indexed (paragraphs [0037], [0061] and [0063], second column (CAL) in table 1).

Mulgund does not show that at least one multi-mote registry is resident in said at least one mote.

Madden shows a multi-mote registry [a short list] resident in a mote (under 2.2 Communication in Sensor Networks, paragraph 2).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the method of Mulgund by having a multi-mote registry being resident in the mote in order to keep a list of neighbors who they have heard transmit recently, as well as some routing information about the connectivity of those neighbors (under 2.2 Communication in Sensor Networks, paragraph 2) (similar to information about child nodes in Mulgund, Table 1, second column).

As to claim 39, Mulgund shows that one or more indicators of one or more motes to be indexed comprise one or more mote-network addresses (paragraph [0037]).

Conclusion

21. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to OLEG SURVILLO whose telephone number is (571)272-9691. The examiner can normally be reached on M-Th 8:30am - 6:00pm; F 8:30am - 5:00pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Andrew Caldwell can be reached on 571-272-3868. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2142

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Examiner: Oleg Survillo

Phone: 571-272-9691

/Andrew Caldwell/

Supervisory Patent Examiner, Art Unit 2142